

CLAIMS

1. Portable communication device (10) comprising:
a first part (12) comprising a ground plane (18) located within and extending
5 through the first part, and
a hinging section (15, 16) joined to the first part, stretching along an end of the
first part for providing rotation of the first part in relation to a second part (14)
around a first axis (17) and providing a hinge cavity (21) inside the hinging
section surrounding said axis,
10 wherein an antenna element (20; 28, 30, 32) is at least partly provided inside
the hinge cavity and the ground plane stretches from the first part into the
hinge cavity at a distance from the antenna element.
2. Portable communication device according to claim 1, wherein the antenna
15 element includes at least two electrical connecting points (36, 38) for
connection to the ground plane and to a radio circuit of the device.
3. Portable communication device according to claim 1 or 2, further comprising a
20 second part (14) connected to the first part via the hinging section.
4. Portable communication device according to claim 3, wherein the hinging
section has a thickness, which is larger than the thickness of the first part.
5. Portable communication device according to any previous claim, wherein the
25 ground plane is provided with a bent section (22) provided within the hinge
cavity and bent away from the part of the ground plane provided in the first
part for providing an increased distance between the ground plane and the
antenna element in the hinge cavity.
6. Portable communication device according to claim 5, wherein the bent section
30 of the ground plane is curved.
7. Portable communication device according to claim 5 or 6, wherein the bent
section of the ground plane is provided along at least parts of a wall (24) of the
35 hinge cavity.
8. Portable communication device according to any previous claim, wherein the
antenna element is bent along a wall (26) of the hinging section provided
essentially opposite the ground plane.

- 5 9. Portable communication device according to any previous claim, wherein the antenna element is a multiband antenna element (28, 30, 32) essentially provided in the hinge cavity.
- 10 10. Portable communication device according to claim 9, wherein the multiband antenna has at least two sections (28, 30, 32) of which one (30) is provided at a lateral side wall of the hinge cavity.
- 10 11. Portable communication device according to any previous claim, wherein the hinge cavity comprises another functional element of the device between antenna element and ground plane.
- 15 12. Portable communication device according to any previous claim, wherein it is a cellular phone.
- 20 13. Antenna system for provision in a portable communication device, said device having a first part (12) and a hinging section (15, 16) joined to the first part, stretching along an end of the first part for providing rotation of the first part in relation to a second part (14) around a first axis (17), said hinging section provided with a hinge cavity (21) in the interior surrounding said axis and comprising:
- 25 a ground plane (18) to be located within and extending through the first part, and
an antenna element (20; 28, 30, 32) for provision at least partly inside the hinge cavity, wherein the ground plane is dimensioned for stretching from the first part into the hinge cavity at a distance from the antenna element.